

Quality of life for Patients with Cholelithiasis in Baghdad Teaching Hospitals

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Abstract- Background: This study was conducted to determine the effect of gallstones disease on patients Quality of life. And association of QoL in GD patients was assessed with different factors as (Socioeconomic status, age ,gender ,level of education) in (100) patients attending to surgical wards in teaching hospitals.

Objectives: the study objective is to determine the quality of life for patients with Cholelithiasis and to find out the relationship between the demographic characteristics as (Age , gender , level of education and socioeconomic status) with the quality of life .

Methodology: A descriptive study was carried out at surgical wards and out patients clinics on patients with Cholelithiasis at Baghdad teaching hospitals .Also, started from October 15th, 2015 through July 30th, 2016. A non – probability (purposive sample) of (100)patients (66 female and 34 male) with cholelithiasis. The data were collected through the use of constructed questionnaire, which consisted of three parts (1) Demographic data form that consisted of (10) items , (2) Information concerning study sample , include : Patient's information , Medical information , Previous diseases, Surgical operations, pregnancy and childbirth, signs & symptoms , drugs & medications and food intake consisted of (5,5,15,1,3,11,13&10) items respectively.(3) Quality of life domains include (6) domains which, physical, psychological , independence, social, environmental & religious .that consisted of (17,21,15, 9, 12 &7) items respectively. Also, the direct interview technique used to information collection. Reliability of the questionnaire was determined through a pilot study and the validity through a panel of (19) experts. Descriptive statistical analysis procedures (frequency, percentage, mean score). Furthermore , inferential statistical analysis procedures (Chi-square) and (SPSS) ver (10) were used for the data analysis.

Results: The results of the study indicated that (66%) of the study sample were female & (34%) male. the majority of age groups was (40 – 49) yrs, (80.0%) of patients were married & low level of education. (84%) of the study sample were Unskilled workers as retired, housewife. (88.0%) of patients live in urban. (2 – 4) persons in each room had accounted (68%). Steroids drug accounted low response to moderate , " Aspirin, Voltarin , Valium ,Ceftriaxone ,Sandostatin ,Oral contraceptives, Menstruation regular drugs, Estrogen hormone , B12 and Vit C " registered (moderate, high, low ,high ,low , low, low, low, moderate and low) uses respectively. Physical, psychological , independence, social, environmental & religious domains had reported (high , moderate , moderate , low, moderate & moderate) negative responses respectively regarding to QoL. **Conclusion,** Assessment of QoL registered a moderate negative

response for studied patients with cholelithiasis . And a weak relationships are accounted with no significant between QoL domains with socio - demographical characteristics (Age ,gender ,level of education and socioeconomic status).

Recommendations. preventive strategies can be promoted QoL for patients with cholelithiasis as dietary modification by consumption of low fat diet ,high dietary fibers. stop smoking & drinking alcohol . regular physical activity . control of obesity and diabetes mellitus . avoiding rapid weight loss. educational program for all patients & their families also, for health workers about gallstones disease . the patients should have series note books ,booklets and periodical follow up.

Index Terms- Quality of life, Cholelithiasis

I. INTRODUCTION

Gallstones diseases represents a significant burden for health care worldwide⁽¹⁾⁽²⁾ . GD is one of the most a common disorders among the patients(Pts) admitted to the emergency rooms with abdominal discomforts, epigastric pain, loss of appetite, nausea, vomiting, etc⁽³⁾. The pain due to the obstructing by stone that causes sudden expansion of the GB is called "Biliary Colic". This typical pattern of the pain occurs at epigastric region or hypochondrial region & lasts between quarter hour to several hs commonly after a fatty meal. As the s supply is a splanchnic nerve, pain radiates to shoulder tip or right scapula & occasionally to back⁽⁴⁾ . most of the GS Pts found with severe abdominal pain requiring treatments , investigations & surgical interventions. GS are classified into: cholesterol stones (ChLS), mixed stones(MS) & pigment stones (PS). However, all the stones even pure cholesterol GS usually contain small s amount of bilirubin(Bn) . The prevalence of GS continues to elevate with age, also in females it is higher than in males . This may be due to the rise of cholesterol content in the bile(B) via the effects of estrogen. There are (3) stages of GS formation , as (super saturation, nucleation & aggregation) ⁽⁵⁾. QoL is a frequently used phrase, but it lacks a precise & consistent definition. According to WHO demonstrates many complexities in an individuals' life. A person perceives a location in life according to his goal, family, expectation of his beloved one & his own satisfaction , standard of work he can do, his enforce his weakness in the context of the value & culture . It is a concept which haven't limitation & it affects in complex way by the individuals' physical health, psychological state, social relationships & level of independence⁽⁶⁾also complexity arises with gallbladder stones. we will use an instrument for

measuring quality of life (the WHOQOL-100) items in this study that are the six broad domains of quality of life include (physical ,psychological, level of Independence , Social Relations , Environment and Spirituality/ Religion beliefs).

Objectives of the study :

1. To determine the quality of life for patients with Cholelithiasis .
2. To find out the relationship between the demographic characteristics as (Age ,gender, level of education and socioeconomic status) with the quality of life .

II. METHODOLOGY

A descriptive quantitative design was carried out through the present study in order to achieve the early stated objectives. After approval of the Council of Nursing College upon the study , the researcher submitted a detailed description including the objective and methodology of the study to the Ministry of Planning (Central Statistical Organization) for the acceptance of the questionnaire draft . The setting of the study including the Gastroenterology and Hepatology Teaching Hospital , Baghdad Teaching Hospital , AL- Imamian AL Kadimain Teaching Hospital and AL-Kindi Teaching Hospital .the study was performed on the patients with gallstones in the surgical wards and out patients clinics. A non – probability (purposive sample) of (100)patients (66 female and 34 male) with cholelithiasis and preoperative cholecystectomy who visited the four Baghdad teaching hospitals during the period from 8th March to June 2016. An assessment tool was adopted and developed by the researcher to measure the quality of life for patients with cholelithiasis . The final study instrument consisting of three parts: Part I: Demographic , Economical and Environmental Characteristics: Demographic characteristics sheet , consisted of (5) items , which included age , gender , marital status , level of education and occupation. Economical and Environmental Characteristics sheet include (5) items which included number of a house members , possessing of the house own, family type , residency and rooms number of the house. Part II: Information concerning the study sample: Patient's information was consisted of (5) items which included weight , height , smoking cigarette , drinking alcohol and number of days patients were admitted to the hospitals. Medical information was consisted of (5) items for genetic susceptibility (15) items for Previous diseases (1) item for Surgical operations (3) items for pregnancy and childbirth (11) items for sings and symptoms (13) items for Drugs and Medications and (10) items for food intake.

Part III: Quality of Life Domains :Cholelithiasis Patient's QoL questionnaire is adopted of the WHOQoL questionnaire (WHOQoL,1998)to measure the variables underlying the present study and based on (6) domains ,which were described as following: 1.Physical Domain: This domain was measured through (5) sub domains of health status which included pain and discomfort (6) items ,sleep (3) items ,rest (3) items ,energy (2) items and fatigue (3) items .the total items were (17) items for physical domain . this items rated and scored as (3 for always) , (2 for sometimes) and (1 for never) .High score = 15 (88.2%), Moderate score =2 (11.8%) 2.Psychological Domain: This

domain was measured through (6) sub domains of positive feeling (3) items ,negative feeling (5) items ,self esteem (4) items , thinking (4)items ,memory and concentration (3) items and Bodily Image & appearance (2) items .total (21) items . High score 8(39.1%), Moderate score 7 (33.3%), Low score 6(28.6%). 3. Independence Domain: This domain was measured through (4) sub domains included Mobility (4) items, Activities of daily living (6)items , Work capacity (3)items , Dependence on medications (2) items . total (15). H S=4(26.75) , MS=6(40.0%) , LS=5(33.3%) 4. Social Domain :It consists of (3) sub domains is composed of three parameters such as : Personal relationships (3) items, Social support (4) items and Sexual behavior(2) items. Total (9) items ,MS=3(33.3%) , LS=6(66.7%) 5. Environmental Domain: It consists of (5) sub domains is composed of five parameters such as : Physical safety and security (2)items , Home and material environment (3)items, Health & social care (3) items , Financial sources(2) items and Participant in the Parks & opportunities for recreation / leisure(2) items. total (12) items ,HS=6(50%) , MS=5(41.7%) , LS=1(8.3%). 6. Religious & spiritual Domain: It consists of (7) items determine the QoL of the patient with cholelithiasis. HS=1(14.3%) , MS=5(71.4%) , LS=1(14.3%). The data were collected through the utilization of developed questionnaire and the interview technique with the adult patients have cholelithiasis. data were collected during the day between 10 am to 4 pm. The determination was conducted during the period from 8th March 2016 to June 2016. **Statistical Analysis:** 1.Descriptive data analysis: a. Tables (Frequencies, Percents, and Cumulative Percents), arithmetic mean, and standard deviation. b. Summary Statistics tables including: Mean of score (MS) in light of questionnaire's items, Grand mean of score (GMS), Global mean of score (G'MS), with their Standard Deviation (SD), Relative Sufficiency (RS%) .c. Percentile D .Contingency Coefficients for the association tables. e. Graphical presentation 2.Inferential data analysis: a. Alpha Cronbach (α). B. Reliability Coefficient for the Pilot study through using Formula ⁽⁷⁾.c. Contingency Coefficients (C.C.) test. D. Chi-Square test. E . Binomial test.

III. RESULTS

Table (1): Distribution of the studied sample according to (DCv.) with comparisons significant.

Relative to age groups, majority of the studied sample was reported at the middle age (40 – 49) yrs., and they are accounted (28%) with mean value and standard deviation 44.94 and 15.38 yrs. Respectively. In regarding to gender it is noticed that two third of studied sample were female (66.0%), while male were accounted (34%). Concerning to the marital status the majority of the sample were married and accounted (80.0%). Relative to educational level the majority of the study sample (80.0%) were low level of education such as illiterate , read and write , primary and intermediate schools. Regarding to subject of occupation status , results indicated that majority of the study sample were unskilled worker as laborers, farmers , retired ,house wife ... they are accounted (84.0%). Relative to subject of residential environment the results showed the highest percentage of the study sample were lived “ Urban” (88.0%). Also the findings indicate that highest percentage of the study sample regarding to

subject of the crowding index at the second level of (2-4) persons each room and accounted (68.0%).

DCv.	Groups	No.	Cum. %	C.S. (*) P-value
Age Groups Yrs.	< 20	3	3	$\chi^2 = 29.26$ P=0.000 (HS)
	20 _ 29	14	17	
	30 _ 39	21	38	
	40 _ 49	28	66	
	50 _ 59	15	81	
	60 _ 69	12	93	
	≥ 70	7	100	
	total	100		
	Mean ± SD	44.94 ± 15.48		
Gender	Male	34	34	Bin. test P=0.002 (HS)
	Female	66	100	
Marital Status	Single	7	7	$\chi^2 = 162.96$ P=0.000 (HS)
	Married	80	87	
	Divorced	2	89	
	Widow	11	100	
Education level for patient	Illiterate	18	18	$\chi^2 = 12.80$ P=0.025 (S)
	Read & Write	24	42	
	Primary	24	66	
	Intermediate	14	80	
	Secondary institute & More	8 12	88 100	
Job of patient (Occupation)	High professional & managerial jobs	2	2	$\chi^2 = 117.68$ P=0.000 (HS)
	Lower professionals, skilled and semiskilled	14	16	
	Unskilled workers as laborers, farmers ...	84	100	
Family Types	Single	46	46	Bin. test P=0.484 (NS)
	Extend	54	100	
Residency	Urban	88	88	Bin. test P=0.000 (HS)
	Rural	12	100	
Crowding Index	< 2	26	26	$\chi^2 = 60.08$ P=0.000 (HS)
	2 _ 4	68	94	
	≥ 5	6	100	

(*) HS: Highly Sig. at P<0.01; S: Sig. at P<0.05; NS: Non Sig. at P>0.05; Testing based on One-Sample Chi-Square test, as well as Binomial test.

In Table (2): Distribution of the studied sample according to (SDCv.) with comparison significant

SDCv.	Groups	No.	Cum. %	C.S. (*) P-value
Socio-Economic Status	Low	65	65	$\chi^2 = 32.06$ P=0.000 (HS)
	Moderate	29	94	
	High	6	100	

(*) HS: Highly Sig. at P<0.01; Testing based on One-Sample Chi-Square test.

The majority of studied patients had a low responses, and they are accounted (65%), while leftover of moderate, and high level are accounted for (29%), and (6%) respectively. It could be

conclude that most of the studied patients were recorded "Low & Moderate" levels, and they are accounted (94%). In addition to that, significant difference at P<0.01.

Table(3): Summary Statistics for patients concerning "Drugs and Medications" with assessment

Drugs and Medications		Responses	No. & %	MS	SD	RS %	Ass. (*)
Steroids drug:	Hydrocortisone	Never	54	1.55	0.66	51.7	L
		Sometimes	37				
		Always	9				
	Prednisolone	Never	75	1.36	0.67	45.3	L
		Sometimes	14				
		Always	11				
	Dexamethazone	Never	41	1.67	0.62	55.7	M
		Sometimes	51				
		Always	8				
Analgesics and narcotic:	Aspirin	Never	36	2.05	0.88	68.3	M
		Sometimes	23				
		Always	41				
	Diclofenac sodium (Voltarin)	Never	9	2.64	0.64	88	H
		Sometimes	18				
		Always	73				
	Valium	Never	72	1.34	0.59	44.7	L
		Sometimes	22				
		Always	6				
Antibiotics : Ceftriaxone		Never	8	2.68	0.62	89.3	H
		Sometimes	16				
		Always	76				
Malignant drug: Sandostatin		Never	98	1.02	0.14	34	L
		Sometimes	2				
		Always	0				
Females drugs only:	Oral contraceptives	Never	51 (77.3)	1.32	0.64	44	L
		Sometimes	9 (13.6)				
		Always	6 (09.1)				
	Menstruation regular drugs	Never	49 (74.2)	1.39	0.72	46.3	L
		Sometimes	8 (12.1)				
		Always	9 (13.6)				
	Estrogen hormone	Never	55 (83.3)	1.23	0.55	41	L
		Sometimes	7 (10.6)				
		Always	4 (06.1)				
Food supplements :	Food supplements: Vitamin B12(folic acid)	Never	52	1.73	0.84	57.7	M
		Sometimes	23				
		Always	25				
	Food supplements: Vitamin C (ascorbic acid)	Never	88	1.12	0.33	37.3	L
		Sometimes	12				
		Always	0				

(*)L:Low; M:Moderate; H:High

Steroids drug accounted low response to moderate , " Aspirin, Voltarin , Valium ,Ceftriaxone ,Sandostatin ,Oral contraceptives, Menstruation regular drugs, Estrogen hormone , B12 and Vit C " registered (moderate, high, low ,high ,low , low, low, low, moderate and low) uses respectively.

Overall Assessment QoL:

"Overall Assessments", consists of sub and main domains for QoL, table (4) shows summary statistics and initial

assessments, such that, grand and global mean of score, standard deviation, and relative sufficiency, and as follows:

a. Physical domain, shows that most of studied sub main domain had a high negative responses regarding to QoL of studied patients, as well as "Energy" sub domain had a moderate response, and in light of an overall assessment, this domain had reported high negative response.

B .Psychological domain, shows that most of studied sub main domains had a moderate negative responses regarding to

QoL of studied patients, as well as "Thinking, and Bodily Image & Appearance" sub main domains had high negative responses, then finally, "Memory & Concentration" had low negative response, and in light of an overall assessment, this main domain had reported moderate negative response.

C .Independence domain, shows that sub main domains, which had high negative response regarding to QoL for studied patients are reported with "Work capacity, and Dependence on medications and treatment", while "Mobility" sub main domain of had reported a moderate response, then finally with subject to "Activities of daily living" sub main domain had a low negative response. Finally, in light of an overall assessment, this main domain had reported moderate negative response.

D .Social domain, shows that subject to sub main domains, which had reported high negative response regarding to QoL for studied patients with "Social Support", while "Personal Relationships" sub main domain had reported a moderate

response, then finally "Sexual Behavior" sub main domain had a low negative response. Finally, in light of an overall assessment, this main domain had reported low negative response.

E .Environmental domain, shows that most of studied sub main domains had a moderate negative responses regarding to QoL of studied patients, as well as "Thin Physical Safety and Security, and Financial Sources" sub main domains had high negative responses, and in light of an overall assessment, this main domain had reported moderate negative response.

F .Religious & Spiritual main domain, shows in general term trend had a moderate negative responses regarding to QoL .

G .An overall QoL assessment according to studied questionnaire items according to global mean score a moderate negative response are obtained for studied the patients.

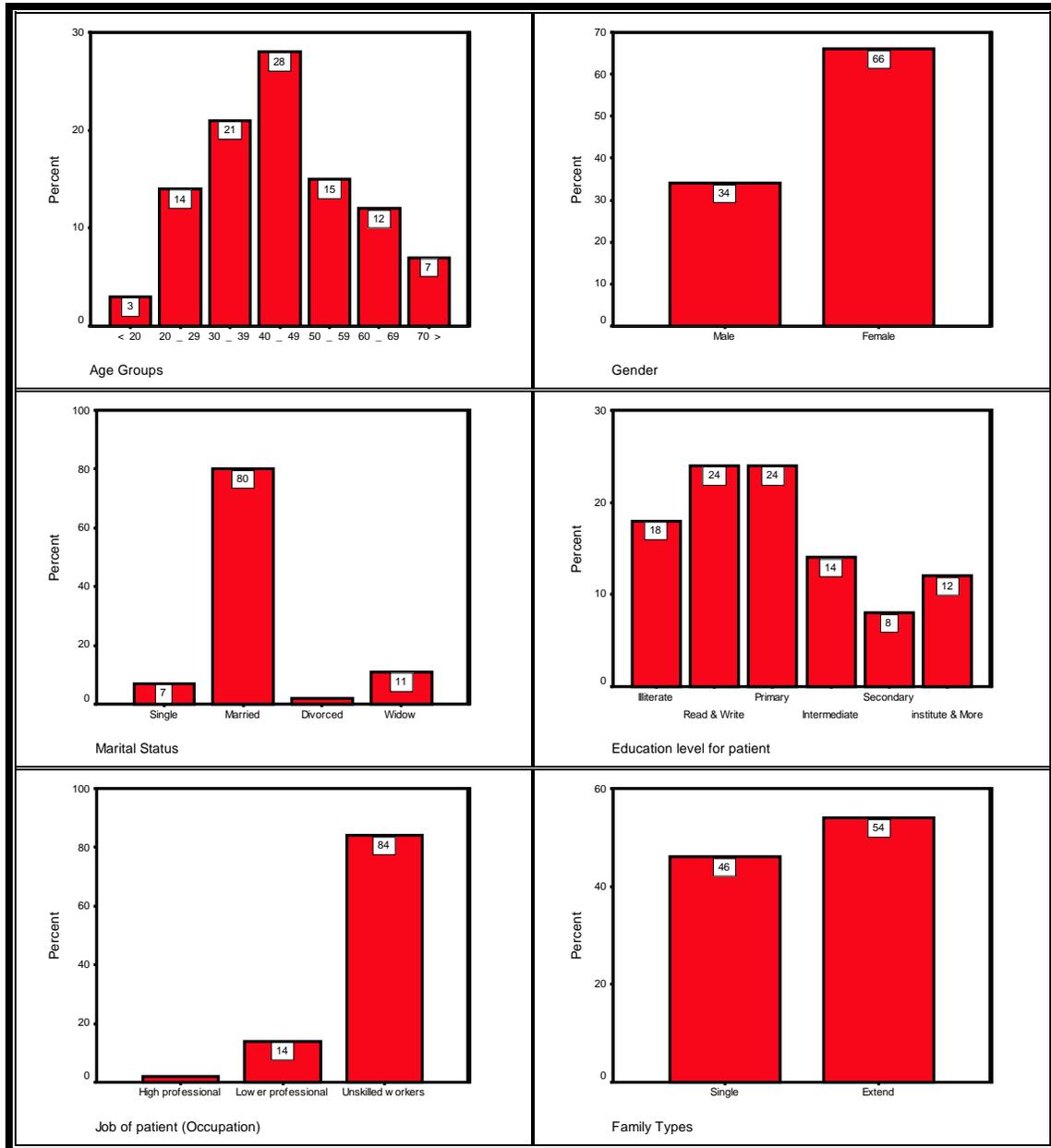
Figure (1) represented graphically percentages of the studied (DCv.)'s of the preceding table.

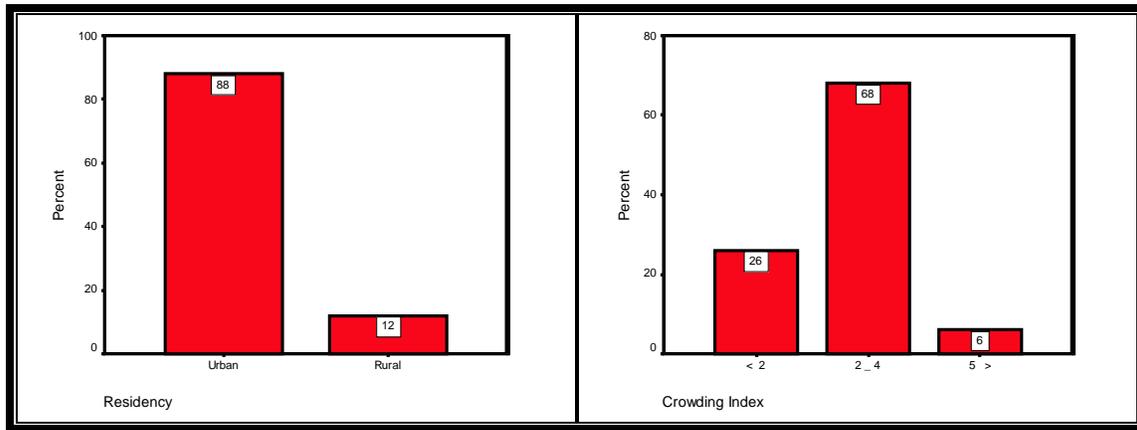
Table (4) : Summary statistics for patients with Cholelithiasis disease according to sub and main domains for studying quality of life

Sub and Main Domains of QoL	No.	MS	SD	RS%	Ass. (*)
Pain & discomfort	100	2.622	0.427	87.4	H
Sleeping	100	2.533	0.506	84.4	H
Rest	100	2.427	0.445	80.9	H
Energy	100	2.255	0.548	75.2	M
Fatigue	100	2.497	0.550	83.2	H
Physical Domain	100	2.467	0.335	82.2	H
Positive Feelings	100	2.307	0.313	76.9	M
Negative Feelings	100	2.038	0.473	67.9	M
Self - Esteem	100	2.145	0.354	71.5	M
Thinking	100	2.545	0.368	84.8	H
Memory & Concentration	100	1.627	0.567	54.2	L
Bodily Image & appearance	100	2.695	0.471	89.8	H
Psychological Domain	100	2.076	0.211	69.2	M
Mobility	100	1.910	0.292	63.7	M
Activities of daily living	100	1.583	0.655	52.8	L
Work capacity	28	2.798	0.419	93.3	H
Dependence on medications and treatment	100	2.445	0.460	81.5	H
Independence Domain	100	2.043	0.376	68.1	M
Personal Relationships	100	2.057	0.544	68.6	M
Social Support	100	2.473	0.324	82.4	H
Sexual Behavior	100	1.285	0.384	42.8	L
Social Domain	100	1.623	0.250	54.1	L
Physical Safety and Security	100	2.390	0.345	79.7	H
Home and Material Environment	100	2.253	0.370	75.1	M
Health & Social Care	100	2.115	0.460	70.5	M
Financial Sources	100	2.750	0.423	91.7	H
Participant in the Parks & Opportunities for Recreation / leisure	100	2.010	0.225	67.0	M

Environmental Domain	100	2.258	0.188	75.3	M
Religious & Spiritual Domain	100	2.051	0.328	68.4	M
Overall QoL	100	2.069	0.151	69.0	M

(*)L:Low; M:Moderate; H:High





Figure(1): Bar charts for Studied Socio-Demographical Characteristics .

Relationship of QoL main domains and (SDCv.):

Table (5) shows relationship between assessment regarding QoL for each main domains independently, such that (Physical, Psychological, Independence, Social, Environment, Religious & Spiritual) and (SDCv.), throughout contingency coefficients and their testing significant. Results shows that regarding contingency coefficients of measuring causes correlation ship throughout testing significant, a weak relationships are accounted with no significant at $P > 0.05$ between different components of

studying QoL throughout studied main domains and different patient's socio-demographical characteristics variables, except with the job of patients, which showed a highly significant relationship at $P < 0.01$.

Accordance with the preceding results, it could be concludes that studied questionnaire of studying quality of life patients with Cholelithiasis at teaching hospitals could be generalize even though differences are reported studied subjects in light of socio-demographical characteristics variables would be.

Table (5): Association between Basis Information and Socio-Demographical Characteristics variables with an overall assessments due to compact all main domains according to "Under/Upper" Cutoff point

Demographical Characteristics X Main Domains (QoL) Assessment	Physical Domain		Psychological Domain		Independence Domain		Social Domain		Environment Domain)		Religious & Spiritual Domain	
	C.C.	Sig.	C.C.	Sig.	C.C.	Sig.	C.C.	Sig.	C.C.	Sig.	C.C.	Sig.
Age Groups	0.181	0.759	0.261	0.295	0.270	0.247	0.220	0.532	0.266	0.266	0.260	0.300
Gender	0.180	0.067	0.186	0.058	0.167	0.091	0.113	0.254	0.099	0.319	0.072	0.471
Marital Status	0.199	0.248	0.120	0.689	0.206	0.218	0.136	0.597	0.154	0.488	0.186	0.309
Education level for patient	0.312	0.055	0.230	0.351	0.235	0.322	0.120	0.917	0.179	0.654	0.236	0.316
Job of patient (Occupation)	0.421	0.000	0.234	0.056	0.000	1.000	0.119	0.488	0.100	0.604	0.022	0.976
Family Types	0.040	0.688	0.138	0.164	0.080	0.422	0.061	0.540	0.169	0.086	0.132	0.183
Residency	0.021	0.837	0.173	0.079	0.122	0.218	0.139	0.162	0.108	0.276	0.098	0.322
Socioeconomic Status	0.222	0.076	0.088	0.674	0.067	0.799	0.185	0.170	0.169	0.229	0.175	0.206

(*) NS : Non Sig. at $P > 0.05$; HS : Highly Sig. at $P < 0.01$

IV. DISCUSSION

1.Discussion of the Demographic Characteristics:

Relative to the table (1)and figure (1) The most results of study patients are involved age group (28%) is found to be (40-49) yrs and the mean of the age was 44.94 yrs.

result of study sample are supported by study in Brahmapur (5),they described that the bulk of the GD (40%) found in the age group of 41-50 yrs and the mean age was 45.28. Concerning to the marital status the majority of the sample were married and

accounted (80.0%) the result is similar to Indian(6) study which estimated that 96% patients were married. Relative to educational level the majority of the study sample (80.0%) were low level of education such as illiterate , read and write , primary and intermediate schools.

Regarding to subject of occupation status , results indicated that majority of the study sample were unskilled worker as laborers, farmers , retired ,house wife ... they are accounted (84.0%).this result agrees with the Italian study in Sweden Study(8) they stated that , a higher risk of GD was found among housewives.

the highest percentage of the study sample were lived "Urban" (88.0%). This result agrees with Germany study⁽⁹⁾ suggested that Cholelithiasis plays one of the major sources of morbidity in developed countries .

2. Discussion of the Socio- Economic Status. In regarding to the socio-economic status , table (2 show that the majority of the groups had a low responses ,and they are accounted (65%). This result agrees with the a Sweden Study⁽⁸⁾ they stated that a relationship between GD and low social class.

Discussion of Overall Assessment QoL: Concerning of the "Overall Assessments QoL ", consists of sub and main domains, table (4).

1. Physical domain, shows that most of studied sub main and main domain had a high negative responses regarding to QoL of studied patients.

2. Psychological domain, shows that most of studied sub main and main domains had a moderate negative responses regarding to QoL of studied patients.

3. Independence domain, shows that sub main domains and main domain had reported moderate negative response.

4. Social domain, shows that sub main and main domains, which had reported high negative response regarding to QoL for studied patients.

5. Environmental domain, shows that most of studied sub main and main domains had a moderate negative responses regarding to QoL of studied patients.

6. Religious & Spiritual main domain, shows in general had a moderate negative responses regarding to QoL for studied patients.

7. Generally QoL assessment according to studied questionnaire items according to global mean score a moderate negative response are obtained for studied patients with Cholelithiasis disease.

These result of study sample are supported by Indian study⁽⁶⁾ they stated that the presence of chronic illness is associated with deteriorating QoL.

V. CONCLUSIONS

The majority results of the study sample were at the age group (40-49) yrs. Two third of the patients were females. Majority of patients were married , pregnant and multi parous women. Also, they had low level of education. Highest percent of group were a housewives and live with extended families at the crowded city. Furthermore ,most of them had a low socio-economic status. High percent of them were within obesity & overweight.

QoL assessment according to global mean score in 100 patients a moderate negative response are obtained for studied patients with Cholelithiasis disease. A weak relationships are accounted between different components of studying QoL throughout studied main domains and different patient's socio -

demographical characteristics variables(Age ,gender ,level of education and socioeconomic status) .

VI. RCOMMENDATION

The risk of gallstones disease may be decreased by avoiding sedentary habits with life style and dietary modification by reducing consumption of saturated fat , caloric diet , consumption of dietary fibers, stop smoking & alcohol drinking , regular physical activity , control of obesity ,control of diabetes mellitus , avoiding rapid decrease body weight and healthy dietary regimen & prevention strategies.

REFERENCES

- [1] Bodmer M , Brauchli YB, Krähenbühl S, Jick SS, Meier CR :Statin use and risk of gallstone disease followed by cholecystectomy.JAMA 2009; 302.
- [2] Li-Ying Chen, Qiao-Hua Qiao, Yu- Hao Chen, Guan-Qun Chao, Li-Zheng Fang : Metabolic syndrome and gallstone disease. World J Gastroenterol , 2012; Vol(18) issue 31: p. 4216.
- [3] Marschall HU and Einarsson C. Gallstone disease. J Intern Med .2007; 261: 529-542.
- [4] Karmacharya A, Malla BR, Joshi HN, Gurung RB, Rajbhandari M : The Predictive Value of Pre-Operative Symptoms Including Upper Gastrointestinal Endoscopy Before Laparoscopic Cholecystectomy for Elective Symptomatic Cholelithiasis , Kathmandu Univ Med J 2013;44(4):300-304.
- [5] Mahammad Asfak Ahmed, Bhupati Bhusan Das, Sushanta kumar Das, Niranjan Sahoo , Laxmidhar Padhy, Susil Kumar Rath: Quantitative analysis of serum lipid profile in patients with Gallstone disease. Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 14, April 06, 2015; Page: 2188-2203.
- [6] Pandey Punam, Pandey Manoj, Shukla V.K: Gallbladder Cancer Survivors and Quality of life : International Journal of Medical Research & Health Sciences, 2014;3(3):535-540.
- [7] Al-Naqeeb Abdulkhaleq A., 2007, "Suggested Technique for estimation of relative smoothed grade for contaminated data in spectral analysis by using Robust General Maximum Likelihood methods of Al- Naqeeb and Thomson", Al Rafedian scientific journal, No. 21, P116-128 - Iraq.
- [8] Ingvar Halldestam: Gallstone disease Population based studies on risk factors,
- [9] symptomatology and complications, Linköping, Sweden 2008,14-47. Henry Völzke ,Sebastian E. Baumeister , Dietrich Alte ,Wolfgang Hoffmann , Christian Schwahn, Peter Simon, Ulrich John ,Markus M. Lerch: Independent Risk Factors for Gallstone Formation in a Region with High Cholelithiasis Prevalence, University, Greifswald , Germany, Digestion 2005;71:97-105.

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